

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99 (Facility-Completed Draft)

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	Keystone Steel & Wire Company	
Facility Address:	7000 S.W. Adams Street, Peoria, Illinois 61641	
Facility EPA ID #:	ILD 000 714 881	
groundwater medi	relevant/significant information on known and reasonably suspected releases to the a, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units ted Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?	
If	yes - check here and continue with #2 below.	
If	no - re-evaluate existing data, or	
if	data are not available skip to #8 and enter IN (more information needed) status code.	
BACKGROUND		
Definition of Environmen	ital Indicators (for the RCRA Corrective Action)	

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of Migration of Contaminated Groundwater Under Control EI

A positive Migration of Contaminated Groundwater Under Control EI determination (YE status code) indicates that the migration of contaminated groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original area of contaminated groundwater (for all groundwater contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Migration of Contaminated Groundwater Under Control EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., nonaqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

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Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2.	Is groundwater known or reasonably suspected to be contaminated ¹ above appropriately protective levels (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?
	If yes - continue after identifying key contaminants, citing appropriate levels, and referencing supporting documentation.
	If no - skip to #8 and enter YE status code, after citing appropriate levels, and referencing supporting documentation to demonstrate that groundwater is not contaminated.
	If unknown - skip to #8 and enter IN status code.
	Rationale and Reference(s): Chlorinated compounds such as TCE, 1,1,1,-TCA, vinyl chloride, 1,2-DCE, trans-1,2 have been detected in deep aquifer at the facility in varying concentrations. For example, 1,1,1-Trichchloroethane concentrations range from 25ppb to 205 ppb, well above the recommended PRG of 5.4ppb; Trichloroethylene concentrations range from 65ppb to 530 ppb well above the PRG of 1.6ppb. See Section 3.2 of the accompanying <i>Environmental Indicators Assessment Report</i> .
Footno	tes:
	¹ Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate levels (appropriate for the protection of the groundwater resource and its beneficial uses).
3.	Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within existing area of contaminated groundwater ² as defined by the monitoring locations designated at the time of this determination)?
	If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the existing area of groundwater contamination ²).
	If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination ²) - skip to #8 and enter NO status code, after providing an explanation.
. •	If unknown - skip to #8 and enter IN status code.

Page 2 (Facility-Completed Draft) If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination²) - skip to #8 and enter NO status code, after providing an explanation. If unknown - skip to #8 and enter IN status code. Rationale and Reference(s): As of November of 2001, monitoring events indicate that the pump and treat method of remediation currently ongoing at the site has reduced the concentrations of total volatile concentrations throughout the plume to below 1ppm. The plume circumference has been drastically reduced and contained within the facility boundary. The deep aquifer does not intersect any surface water within the perimeter of the plume. No offsite migration of contaminated groudwater has ever been reported. -- See Section 3.3 and Section 3.4 of the accompanying Environmental Indicators Assessment Report --Existing area of contaminated groundwater is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of contamination that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of contaminated groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation. Does contaminated groundwater discharge into surface water bodies? If yes - continue after identifying potentially affected surface water bodies. If no - skip to #7 (and enter a YE status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater contamination does not enter surface water bodies. If unknown - skip to #8 and enter IN status code. Rationale and Reference(s): -- See **Section 3.3.3** of the accompanying *Environmental* Indicators Assessment Report -Is the discharge of contaminated groundwater into surface water likely to be insignificant (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater level, and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?

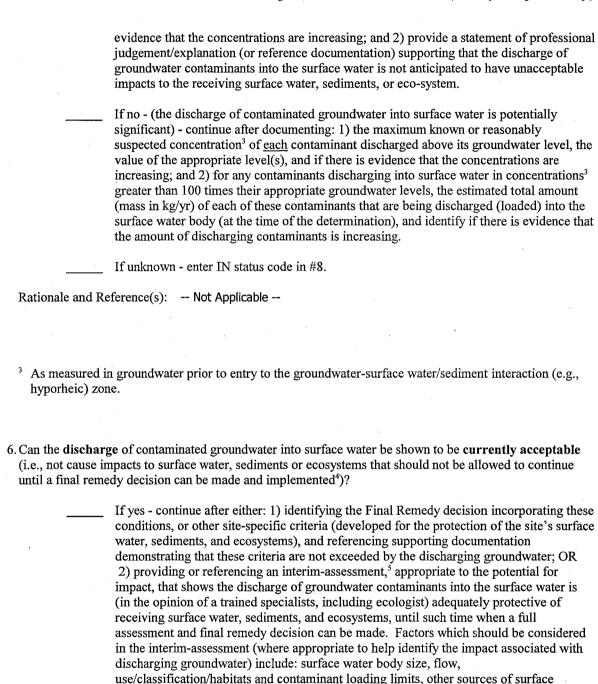
If yes - skip to #7 (and enter YE status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of <u>key</u> contaminants discharged above their groundwater level, the value of the appropriate level(s), and if there is

4.

5.

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water/sediment contamination, surface water and sediment sample results and

agency would deem appropriate for making the EI determination.

comparisons to available and appropriate surface water and sediment levels, as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory

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	If no - (the discharge of contaminated groundwater can not be shown to be currently acceptable) - skip to #8 and enter NO status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystems.
	If unknown - skip to 8 and enter IN status code.
	Rationale and Reference(s): Not Applicable
	⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.
	The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or ecosystems.
7.	Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the existing area of contaminated groundwater?
	If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the existing area of groundwater contamination.
	If no - enter NO status code in #8.
	If unknown - enter IN status code in #8.
	Rationale and Reference(s): <u>Historical monitoring data for the GMZ indicate the plume containing VOCs</u> has been stabilized, and is in fact shrinking. The facility will continue to operate the existing pump and treat system and perform quarterly groundwater monitoring See Section 3.5 of the accompanying <i>Environmental</i>
code CA	Indicators Assessment Report – he appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event A750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below appropriate supporting documentation as well as a map of the facility).
	YE - Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of the information contained in this EI determination, it has been determined that the Migration of Contaminated Groundwater is Under Control at the Keystone Steel & Wire Company facility, EPA ID # ILD 000 714 881 , located at Peoria , Illinois. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated

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n	N - More information is needed to make a do	etermination.
Completed by	Jonathan Adenuga Project Manager, U.S. EPA	Date <u>March, 2002</u>
	signature) Paul LHO print) Joseph M. Boyle title) E (AB Chief EPA Region or State) Region 5	Date March, 2001
Locations where Re	eferences may be found:	
determin submitte February	onmental Indicators Assessment Report acconnation submittal. Also refer to the Current Cord by Keystone Steel & Wire Company to U.S. 2001, and the RCRA Facility Assessment Report Eddy (under contract with U.S. EPA Region Steel & Eddy (under contr	oditions Report EPA Region 5 in Ort prepared in 1989 by
Contact, telephone	number, and e-mail address:	
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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: _	Keystone Steel & Wire Company	
Facility Address:	7000 S.W. Adams Street, Peoria, Illinois	61641
Facility EPA ID #	II D 000 714 881	

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

√	If yes - check here and continue with #2 below.
	If no - re-evaluate existing data, or

if data are not available skip to #6 and enter IN (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of Current Human Exposures Under Control EI

A positive Current Human Exposures Under Control EI determination (YE status code) indicates that there are no unacceptable human exposures to contamination (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Current Human Exposures Under Control EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **contaminated**¹ above appropriately protective risk-based levels (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Groundwater	Yes ✓	No chloride a	? and 1,2-DCE, tra	Rationale / Key TCE, 1,1,1-TCA, Vinyl ans-1,2-DCE, PCE, 1,4-dioxan
Air (indoors) ² Surface Soil (e.g Surface Water Sediment Subsurf. Soil (e.g	g., <2 ft) $\frac{\checkmark}{\checkmark}$ g., >2 ft) $\frac{\checkmark}{\checkmark}$	x 		<u>Lead</u> <u>lead, TCE</u> <u>Lead</u> <u>Lead, arsenic, cadmium,</u>
Air (outdoors)		<u>x</u>		<u>Chromium</u>
	•	nd referencing suff	•	code after providing or citing ag documentation demonstrating
	medium, citing appr	opriate levels (or p	provide an expla	contaminants in each contaminated mation for the determination that brencing supporting documentation.
	If unknown (for any	media) - skip to #6	6 and enter IN s	tatus code.

Rationale and Reference(s) Chlorinated compounds listed above have been detected in deep aquifer at the facility in varying concentrations. For example, 1,1,1-Trichchloroethane concentrations range from 25ppb to 205 ppb, well above the recommended PRG of 5.4ppb; Trichloroethylene concentrations range from 65ppb to 530 ppb well above the PRG of 1.6ppb; Lead is present in soils at a concentration of 790 mg/kg above the recommended PRG of 750mg/kg. In sediments, Lead concentration range from 780 mg/kg to 8,100 mg/kg above the PRG of 750 mg/kg and chromium concentration is present at 529 mg/kg above the PRG of 450 mg/kg. In surface water in several of the onsite SWMUs (East Pond, F-Pond associated Tail Tracks Landfill) Lead concentrations range from 29mg/l to 47mg/l above MCL.

Footnotes:

- ¹ Contamination and contaminated describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based levels (for the media, that identify risks within the acceptable risk range).
- ² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between contamination and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential Human Receptors (Under Current Conditions)

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	$Food^3$
Groundwater	<u>no</u>	<u>yes</u>	<u>no</u>	<u>yes</u>			no
Air (indoors)			=				
Soil (surface, e.g., <2 ft)	<u>no</u>	<u>yes</u>	<u>no</u>	<u>yes</u>	<u>yes</u>	<u>no</u>	<u>no</u>
Surface Water	<u>no</u>	yes			yes	<u>no</u>	<u>no</u>
Sediment	<u>no</u>	<u>yes</u>			<u>yes</u>	no	<u>no</u>
Soil (subsurface e.g., >2 ft)				yes			no
Air (outdoors)							

Instructions for **Summary Exposure Pathway Evaluation Table**:

- 1. Strike-out specific Media including Human Receptors spaces for Media which are not contaminated) as identified in #2 above.
- 2. Enter yes or no for potential completeness under each Contaminated Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential Contaminated Media - Human Receptor combinations (Pathways) do not have check spaces (____). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

	If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter YE status code, after explaining and/or referencing condition(s) inplace, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional <u>Pathway Evaluation Work Sheet</u> to analyze major pathways).
<u>√</u>	If yes (pathways are complete for any Contaminated Media - Human Receptor combination) - continue after providing supporting explanation.
	If unknown (for any Contaminated Media - Human Receptor combination) - skip to #6 and enter IN status code

Rationale and Reference(s): All of the areas where contaminated media exist are located within the confines of the facility's industrial complex, on land that is zoned for industrial use. Based upon the current condition, Engineered barriers that can prevent any possible contact between the identified potential human receptors and contaminated media do not exist. For the above reason, the pathways are considered complete. The Day-care, Recreation and Food pathways were considered incomplete because the area is zoned industrial and these facilities do not exist at the site. Air monitoring data showed levels of contaminants well below set standards.

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significant ⁴ (i.e., in magnitude (in (used to identify	res from any of the complete pathways identified in #3 be reasonably expected to be potentially unacceptable because exposures can be reasonably expected to be: 1) greater tensity, frequency and/or duration) than assumed in the derivation of the acceptable levels the contamination); or 2) the combination of exposure magnitude (perhaps even though inant concentrations (which may be substantially above the acceptable levels) could result exceptable risks)?
	If no (exposures can not be reasonably expected to be significant (i.e., potentially unacceptable) for any complete exposure pathway) - skip to #6 and enter YE status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to contamination (identified in #3) are not expected to be significant.
X	If yes (exposures could be reasonably expected to be significant (i.e., potentially unacceptable) for any complete exposure pathway) - continue after providing a description (of each potentially unacceptable exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to contamination (identified in #3) are not expected to be significant.
· ·	If unknown (for any complete pathway) - skip to #6 and enter IN status code

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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⁴ If there is any question on whether the identified exposures are significant (i.e., potentially unacceptable) consult a human health Risk Assessment specialist with appropriate education, training and experience.

5	Can the significant	exposures (identified in #4) be shown to be within acceptable limits?
	2	If yes (all significant exposures have been shown to be within acceptable limits) - continue and enter YE after summarizing <u>and</u> referencing documentation justifying why all significant exposures to contamination are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
		f no (there are current exposures that can be reasonably expected to be unacceptable)- continue and enter NO status code after providing a description of each potentially unacceptable exposure.
		f unknown (for any potentially unacceptable exposure) - continue and enter IN status code
land is monit house facilit the de and tr on the to beloworke migra sedim action areas agains areas hazare	exposure onsite. All s zoned for industrial s zoned for industrial s zoned by closed circuit any educational, healty boundary, and no greep aquifer groundwatteat system that employ property. The conce ow 1ppm. The deep a zers and trespassers can tion to surface water. The contaminated with levels. Some areas of are distanced from the st incidental contact. In the deep contaminated with the st incidental contact. In the deep contaminated contact. In the deep contaminated with the st incidental contact. In the deep contaminated contact. In the deep contaminated contact contaminated contact. In the deep contaminated contact contaminated contact contaminated contact	ference(s): The assumption used to calculate PRG's are more conservative than the areas where contaminated media exist are located within the facility boundary and the use. The facility is also fenced and entry points are controlled by security guards and television. The site is not used for habitation, has no full time residents, and does not theore, day care, or ply ground facilities. No recreational areas are located within the owth of crops, grazing of livestock, harvesting of fish occurs on the property. Although or beneath the site is contaminated, the plume is currently being remediated by a pump yes four purge wells and an air stripper tower. The entire extent of the plume is contained not interest any surface water within the perimeter of the plume. Plant not be exposed to the groundwater since there is no potable use of water and no Certain areas of the facility investigated under this Consent Decree have soils and he metals (lead, cadmium arsenic and chromium) above the required PRGs and IEPA's fithe facility are also going through closure under IEPA'S's' oversight. All of these remain manufacturing areas. Vegetative cover in all these areas also provide protection Closure activities are done under the facility's health and safety plan. Majority of these remain the soils, sediment, groundwater and surface water are within acceptable limits and these contaminants are controlled
6.	(CA725), and obta	iate RCRIS status codes for the Current Human Exposures Under Control EI event code in Supervisor (or appropriate Manager) signature and date on the EI determination below riate supporting documentation as well as a map of the facility):
		YE - Yes, Current Human Exposures Under Control has been verified. Based on a review of the information contained in this EI Determination, Current Human Exposures are expected to be Under Control at the <u>Keystone Steel & Wire Company</u> facility, EPA ID # ILD 000 714 881, located at <u>Peoria, Illinois</u> under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
		NO - Current Human Exposures are NOT Under Control.
		N - More information is needed to make a determination.

Completed by Jonathan Adenuga	Date March, 2002
Supervisor Supervisor (signature) (print) Joseph M. Boyle (title) ECAB Chief (EPA Region or State) (Supervisor) (signature) (signature) (signature) (signature) (print) Joseph M. Boyle (title) ECAB Chief (EPA Region or State)	Date March, 20
Locations where References may be found:	
An Environmental Indicators Assessment Report accompandetermination submittal. Also refer to the Current Condition submitted by Keystone Steel & Wire Company to U.S. EPA February 2001, and the RCRA Facility Assessment Report Metcalf & Eddy (under contract with U.S. EPA Region 5).	ns Report A Region 5 in
Contact, telephone number, and e-mail address:	
(name) Jonathan Adenuqa (title) Project Manager (phone #) (312) 886-7954	
(e-mail) <u>adenuga.jonathan@epa.gov</u>	

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.